

BAUMGARTEN (G)

Baumgarten (G)

With the Compliments of the Author.

al

ON A SIMPLE CONTINUED FEVER.

BY

G. BAUMGARTEN, M.D.,

PROFESSOR OF THE PRACTICE OF MEDICINE IN THE ST. LOUIS MEDICAL COLLEGE, MEDICAL
DEPARTMENT OF WASHINGTON UNIVERSITY, ST. LOUIS.



REPRINTED FROM THE
TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS,
1893.

ON A SIMPLE CONTINUED FEVER.

By G. BAUMGARTEN, M.D.,

PROFESSOR OF THE PRACTICE OF MEDICINE, ST. LOUIS MEDICAL COLLEGE,
WASHINGTON UNIVERSITY, ST. LOUIS.

DURING the last fifteen years, and longer, in St. Louis and its vicinity, there have come under observation numerous cases of a continued fever, which often are classed with typhoid fever, and by some—with little regard for accuracy of meaning—called typho-malarial, though differing widely from Woodward's "typho-malarial." Let me name it, provisionally, a simple continued fever, so long as we have no positive knowledge of its etiology—basing the term "simple" upon the absence of all signs of localization, and eschewing the names typhoid and typho-malarial, because the cases in question lack the chief characteristics both of typhoid and of malaria.

Having seen, in the course of years, a goodly number of such cases—say one hundred and twenty-five—many of which were entirely uninfluenced by medicinal treatment, I am prepared to give an account of the natural history of this form of fever.

In brief words, it is a fever running, if left alone, a favorable course of from four to five weeks—with rather more tendency to true relapses than typhoid fever—with relatively high temperatures, even hyperpyrexia, but without any essential disturbances of the digestive, respiratory, or nervous system. It has a decided predilection for youthful individuals (my cases ranging from the second to the thirtieth year).

A clear conception of the disease is, perhaps, most readily formed by comparing it with the typical picture of a moderately severe typhoid fever. But before drawing this parallel, I must protest against the assumption that I am describing either *abortive forms* or *mild grades* of typhoid; the very high temperatures, together with the long duration, should alone suffice to guard against such diagnosis.

Considering, first, the course of the fever, we at once meet with considerable differences. Although it is true that one group of these cases begins with a steadily rising fever which, step by step, gains its height about the sixth to tenth day, and develops a temperature-curve very similar to that of typhoid; yet there is another group, about equal in numbers, in which the onset is quite sudden; the physician discovers the patient in high fever, yet suffering surprisingly little. In either group, the progress of the fever is subject not only to considerable variations in one day, but to great irregularity of the daily means. Sometimes, a few days of weakness and malaise, less often of headache and muscular pains, precede the fever; in other instances the fever is initiated by a chill. About the end of the fourth or fifth week the temperature in some cases suddenly drops to or below the normal, with no other critical phenomena than perhaps a profuse sweat. Such termination by crisis, though frequent, is not the rule, however; more often the fever sinks, as in typhoid, by lysis, but occasionally flares up once more to a high temperature before it subsides altogether. The highest temperature I have observed was 106.4° F. in the axilla.

As in the epidemics of true typhoid, here also we meet with a number of cases of short duration, terminating after fourteen to eighteen days. Not all of these aborted cases are mild, however, as judged by the temperature (and it is the temperature alone which can serve in this disease as a criterion of mildness or severity, since all other symptoms, as will be seen, are only *pari passu* concomitants of the fever).

As to the daily variations, not only individual cases but different stages of the same case behave very differently; morning remissions are the rule, with exceptions, but *regular* evening exacerbations are rare; frequently, the temperature is highest soon after noon; sometimes the maximum falls about midnight. But even this behavior is not constant in the same case. At times the daily oscillations are very small (1° F.).

There is no other disease within my knowledge in which the temperature of the skin is so deceptive; in which it is so little possible to judge of the height of the fever by the warmth of the skin as felt by the hand. It is frequently observed that with an axillary temperature of 104° the skin of the extremities, even of the trunk, gives

the impression of apyrexia. So burning a skin, as in scarlet fever, or even in typhoid, is never felt. A series of measurements of the cutaneous temperature, which I made in 1889-90 in cases of this and other febrile diseases, confirmed the impression which the sense of touch gives: the skin really is relatively cool; and they showed, moreover, this noteworthy behavior: while in scarlet and some other fevers the heat of the skin rose and fell somewhat parallel with that of the blood, in *this* continued fever (and also less markedly in typhoid fever) its rise commonly coincided with a fall of the internal temperature, and *vice versa*. (See temperature charts V., VI., and VII., p. 11.)

The pulse-rate does not usually keep pace with the temperature, but is apt to lag behind, and drops sooner than the temperature. *E. g.*, on one day, with a temperature of 103° , the pulse was 108; on the next day, with the same temperature, pulse 92; on the third day, temperature 100° , pulse 88. This behavior was constant enough to enable the physician to predict, from a fall of the pulse-rate, an abatement of the fever on the following day. Even in the later stages the pulse does not reach the frequency of the pulse in typhoid of equal temperature, except in very debilitated patients. Yet the pulse-tracing usually shows the degree of diastolic murmurs which corresponds to the temperature.

The disturbances of the nerve-centres, compared with those which the typhoid patient with equally high fever presents in the same stage of the disease, are extremely slight. Only a minority of cases show distinct muscular and articular pains. In two instances, it is true, I have witnessed pain in the back and limbs in an eminent degree, lasting several days. Headache and sleeplessness are seldom observed, confined to the beginning of the illness, and of short duration; and although many of these patients sleep a good deal, sopor and hebetude of mind are absolutely wanting. Delirium is more frequent, but confined to the night or to periods of highest fever, and some cases with extremely high temperatures remain free from delirium throughout. On the contrary, the youthful patient is often enough found in high spirits, inclined to talk, read, play checkers, perfectly clear in mind, and quite unconscious of his high fever; while the thermometer in the axilla registers 104° and more day after day, he pleads to be allowed to get up next day, to go to school next week—a thing unheard of in typhoid of corresponding severity. Mut-

tering delirium, subsultus tendinum, involuntary urination, etc., are unknown.

These observations, which repeat themselves again and again, conflict with the current assumption that the nervous symptoms in question are due, or mainly due, to the high temperature. Among later authors, Jürgensen, *e. g.*, says, in connection with typhoid fever: "There is no well-founded doubt but that the signs of disturbed cerebral function are, with rare exceptions, consequences of the rise of temperature." (*Lehrbuch d. spec. Pathologie u. Ther.*, 1886, p. 277.) But this view seems to be contradicted point-blank by the common experience in this disease. With degrees of heat quite as high as ever in typhoid, the cerebral symptoms are incomparably less severe, and by no means characteristic. My own interpretation would be that while in typhoid the toxic agent affects the nerve centres severely, in the disease under discussion it affects them (excepting the thermic centres) but slightly.

With equal distinctness this continued fever differs from typhoid by the complete absence of intestinal lesions. The entire digestive apparatus commonly suffers no more than in any other febrile disease, or less. There is some loss of appetite, sometimes complete for a few days, and perhaps a coated tongue; but the tongue usually loses its fur long before the fever abates, and in many cases a very fair appetite returns. As a rule, in spite of the fever, it is easy to nourish these patients fairly well. The dry, red, glazed, typhoid tongue, the black sordes on teeth and lips, are always missed. I have never encountered angina or parotitis. Diarrhœa is rare, and never continuous, nor severe, nor characteristic; no pea-soup stools; in those cases in which diarrhœa set in at any time, the stools were either dark-brown and fetid, or greenish and mucous. Constipation is more frequent. But a normal stool is almost the rule. Meteorism is not frequent, nor of high degree—more frequent in connection with constipation than diarrhœa. Nor have I ever been able to elicit marked tenderness on pressure, or gurgling, in the ileo-cæcal region. It appears unlikely, therefore, that ulceration or catarrh of the small intestines have any part in the disease. Post-mortem evidence is wanting, for there were no fatal cases.

Moreover, enlargement of the spleen is wanting. In only one case was the spleen found enlarged, in an adult—an instance which, in a

malarial country like ours, it seems fair to deem an accidental coincidence. I may lay stress on this point, because search for splenic enlargement has been thorough in every case.

Excepting a slight bronchial catarrh in two instances, the respiratory apparatus was not involved. Sometimes, during the acme of the fever, a hacking, irritative cough appears, which ceases at once on the remission of the fever.

In six cases (of forty-eight examined) the urine contained traces of albumin,¹ but no casts; nor was there ever any other evidence of renal lesion. In the first week the urine is apt to be scant, heavy, dark yellowish-red, loaded with urates; later it is apt to be scant, but of normal color and specific gravity, even while the temperature is high. In the fall of 1889 and in 1890 I applied the diazo-reaction test to every case, without a single positive result. During the late epidemic of typhoid fever in our city (October to December, 1892), I applied the test to every case of simple continued fever in which diarrhœa occurred at any time, and while the diarrhœa lasted, likewise with a uniformly negative result.²

The skin shows neither rose spots, nor herpes, nor petechiæ; one case presented an erythematous blush on the chest, lasting a few hours; another was complicated with urticaria. The course of the disease is not aggravated by bedsores, nor is it followed by loss of hair to any like extent as typhoid fever. During the later weeks the skin is often moist; copious perspiration has been seen only in those cases which at any time experienced, or ended with, a sudden fall of temperature.

The emaciation is usually great, though not so great as is common in typhoid—as follows naturally from the absence of diarrhœa and the better condition of the digestive system. During convalescence, the patients acquire the same active appetite and rapid gain in body-

¹ In one case, only once in the first week: in the other cases during three to five days, never after the fourteenth day of the disease; in one case during five days of the relapse.

² During the prevalence of this epidemic (in which the number of typhoid cases did not equal the number of cases of this continued fever), there occurred numerous cases of diarrhœa, lasting from one to ten or twelve days, intractable to ordinary remedies, but improving under salol, salicin, phenacetin, and the like, which were commonly interpreted as influenza. These cases almost invariably gave a positive reaction with Ehrlich's test. My friend, Prof. C. O. Curtman, who called my attention to the fact, had the same experience.

weight and, later, the same blooming health as in a thoroughly healed enteric fever. In two cases subacute, moderately painful, articular inflammations occurred; these arthropathies affected chiefly the wrists and ankles, were not accompanied by fever, and of only a few days' duration. Apart from these instances, I have observed neither complications nor sequelæ.

Without complete statistical notes, I have gained the impression that true relapses were rather more frequent in this than in typhoid fever. Most of these relapses—which began on the fourth to seventh day of apyrexia—ran a course of equal severity and almost equal duration as the primary attack, and with very high temperatures; surely, if this were typhoid, such relapses were calculated to bring out the marks of the typhoid process.

I will add that in several cases diligent search has been made for the malaria plasmodium in the blood, without success.

From what has been said, it follows that the differential diagnosis between this fever on the one hand, and malaria or typhoid fever on the other, cannot be difficult—except that the first week or ten days perhaps, may not decide against typhoid. Nevertheless, in my contact with professional colleagues I learn that many, in spite of often-repeated experience, invariably consider or suspect such cases at the onset to be malarial, and fill the patient with quinine; and when the case does not yield to quinine, and the fever continues—as it will—they call it typho-malarial, forsooth!

As against typhoid fever, the temperature-curve is not typical, and the gradual stepladder ascent is often wanting; more frequently the fever is high from the first; there are wanting the epistaxis, the bronchial catarrh, the rose spots, the splenic tumor, the ileo-cæcal tenderness, the diarrhœa; and the sensorium remains clear. In the sequence, also, the so-called typhoid symptoms do not develop; there is no sopor, no deafness, no coma vigil, no subsultus tendinum; nor do we see the dry tongue with its glazed cup. No hemorrhage from the bowel, no fatal perforation; and, indeed, within my experience, no fatal case. The fact that some cases which in the end prove themselves typhoid by a perforation or a hemorrhage, have in the earlier stages been confounded with this fever, cannot militate against the view that the two are distinct pathological processes. In short, I regard the absence of all signs of localization as the key to the diagnosis.

The points of *resemblance* with typhoid fever, are, then : (1) The continued fever ; (2) the lassitude and prostration, and in most cases the loss of appetite, enfeebled digestion and consequent emaciation ; (3) the limitation to a period of from three and a half to five weeks ; (4) the liability to relapse.

The points of *difference* are, briefly : (1) Differences in the temperature-curve, especially the frequent hyperpyrexia at the onset, or at least a sudden beginning, and the occasional termination by crisis ; (2) the absence of all signs of localization, notably of intestinal affection, enlargement of the spleen, or rose spots ; (3) the absence of the so-called typhoid symptoms, notwithstanding prolonged high temperatures—even in the relapses.

Now, bearing in mind these important differences, the points of resemblance can justify a diagnosis of typhoid fever in such cases *only on this condition*, that we are prepared to call every continued fever not otherwise explained, a typhoid fever.

From the remittent fevers of malaria our fever is marked off by the absence of intermissions in the pyrexia, the more decided remissions even being rare and irregular—by the absence of icteric complexion, of gastric disturbance, of congestion of liver and spleen. These differences are accentuated by the utter inefficiency of quinine.

Far from considering this disease, therefore, as a combination or hybrid of malaria and typhoid, I feel justified in denying both elements. All the actual symptoms of the disease can be explained directly as symptoms of fever *per se*.

I am fully aware that there is something still wanting to the full history of these cases which might bring out decisive points of identity or difference, namely : (1) The post-mortem demonstration of the presence or absence of the characteristic enteric lesions ; but the opportunity for this is rare and must be accidental, since no case within my knowledge has proved fatal. (2) The demonstration of a common etiology in this fever and the usual typhoid. This line of investigation has yielded no positive information as yet, and the scattered cases of a private practice in a large city promise only uncertain results in this respect. (3) A thorough bacteriological investigation might prove or disprove identity of the morbid cause. This research has not yet been made.

The treatment requires but few words. The high temperatures

have indeed—too frequently, I fear—led me to use antipyretic drugs, quinia, antipyrin, and, later, phenacetin. The two latter, at least, are sometimes justified in that they procure a sense of relief and comfort by removing temporarily the entire group of symptoms of which this disease can boast—the fever symptoms—except the debility; a sense of comfort much greater, on the whole, than the same means afforded in typhoid. None of these remedies abbreviates the disease. Cold ablutions and cool baths have been resorted to with similar effect. Of late, I have usually refrained from all antipyretic means, unless the patient not only had a high temperature, but showed that he suffered from it. Beyond this, the treatment was purely dietetic and symptomatic. A large number of cases were treated without drugs save alcohol. I would strongly urge a treatment which interferes as little as possible. If others have observed, along with the high fever and the symptoms obviously resulting from it, an unusual severity of the course or troublesome complications, this surely may be ascribed in part to meddlesome medication; in more than one case, in which the active antipyretic treatment by quinia, salol, antifebrin, antipyrin, etc., was discontinued at my suggestion, all threatening symptoms abated in spite of the continuance of undiminished fever.

The sketch which has been presented to you was, in the main, embodied in a paper which I had the honor to read before a small circle of medical friends four years ago, and is based on observations which began about 1876. If such cases occurred in the earlier years of my practice I have overlooked them. In 1880, the disease was discussed in the medical societies of St. Louis, and a committee of the Board of Health of that city canvassed opinions on its nature and origin. It is not surprising that the answers elicited by this committee related to all sorts of cases, according as the questions were understood, not only of this but of typhoid and other fevers as well, nor that the resulting report interprets the disease as a “mild expression of the specific poison [of typhoid fever.]” The word *mild* rather avoids the main question.

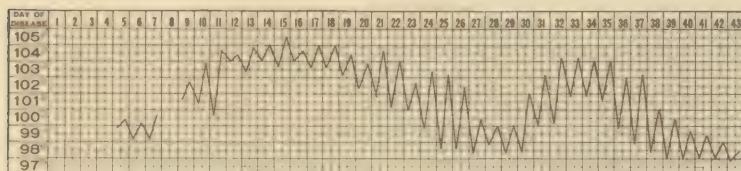
At the meeting of this Association in 1887, Dr. Atkinson, of Baltimore, spoke of “Forms of typhoid fever simulating remittent malarial fever,” and related cases which answer in many particulars to those of which I speak to-day. Yet they also differ enough to leave some doubt whether we refer to the same thing. In the following

year, my colleague, Dr. P. Gervais Robinson, of St. Louis, submitted a short paper on cases of continued fever that are certainly of the same nature as those which I have attempted to sketch. During the months of October, November, and December, 1892, St. Louis was visited by an epidemic of typhoid fever. Both before and during this period there was also an increase in the frequency of the continued fever under discussion. The latter became an object of frequent observation and comment by many observers, and so generally recognized were the incisive points of difference between the two, that some, who could not break away from the idea that all cases of continued fever occurring at this time must be of the same nature, expressed a doubt whether there was any typhoid prevailing at all—a conclusion which abundant post-mortem evidence of typhoid, of course, proved incorrect.

The briefest manner of giving the history of these cases, in the absence of symptoms not directly referable to the fever, seems to be to present records of the temperature, with comments. Cases I. and II. are examples of more or less gradual beginning; the temperature-curve of Case I. looks, indeed, like that of a typhoid with the initial stage long drawn out.

CASE I.—Boy of ten. (First ten or twelve days under the care of my friend, Dr. W. E. Fischel.) A slight hacking cough during the height of the fever, from the fifteenth to the eighteenth day. Much perspiration twenty-fourth to twenty-sixth. Relapse on the thirtieth. Nightly delirium on the thirty-

CASE I.



second to thirty-fifth. A bilious diarrhœa for two days of the acme of the relapse, easily controlled by salicylate of bismuth. No treatment except cold sponging, wine, and infrequent doses of phenacetin. Took nourishment fairly well.

CASE II.—Young lady of about twenty-four. Rise of temperature rather more rapid, without subjective symptoms except weakness. Spent her days in a chair or on a lounge until the seventeenth day, when in the early morning a chill and vomiting set in, lasting an hour, with an axillary temperature

of 105°. After this, she spent a few days in bed. No other symptoms. Nutrition unsatisfactory, but loss of weight not excessive. Convalescence rapid from the thirty-second day. No loss of hair.

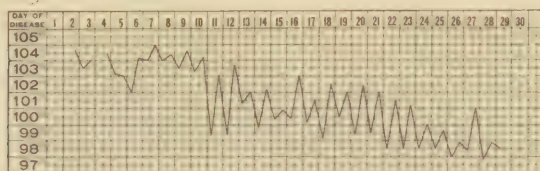
CASE II



Cases III. and IV. are of the class which set in suddenly.

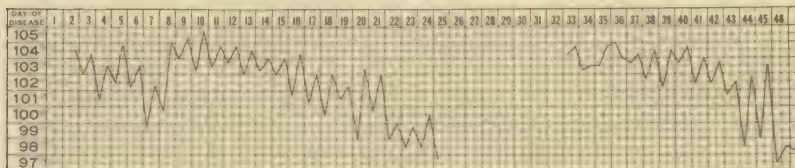
CASE III.—Young lady of about twenty-two. Suffers from nervous excitation, insomnia, slight nightly delirium and total loss of appetite from the seventh to tenth day. During the week following the appetite was capricious. Duration twenty-eight days.

CASE III.



CASE IV.—Schoolboy of fourteen. Began suddenly with a chill and severe headache during the morning hours at school. Since then, no symptoms but weakness and fever. Appetite good or fair throughout. At noon of the thirteenth day he sits up in bed playing checkers, and asks to be sent back to school

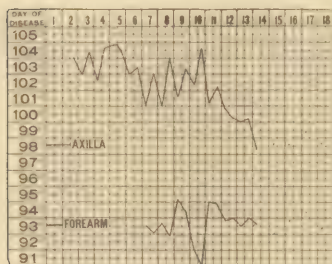
CASE IV.



next week, temperature 104°. Relapse on thirty-second day. On the fortieth day is found at noon sitting up in bed eating a hearty meal, and asks to be permitted to get up and dress, temperature 103½°. Never any delirium; abundant sleep; no diarrhoea; slight constipation at the end of the relapse.

Cases V. and VI. are examples of short duration, one with gradual, the other with sudden beginning. No symptoms beyond the fever. Observations on cutaneous temperature were made in these cases.

CASE V.



CASE VI.

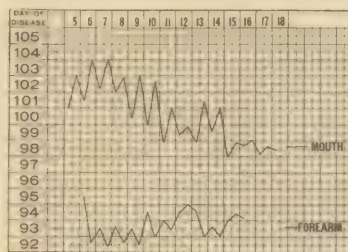
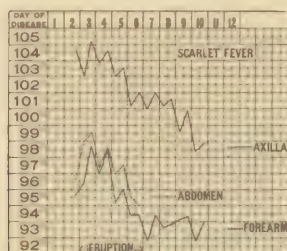


Chart VII. is added to illustrate the behavior of the cutaneous temperature in a case of scarlet fever. (See page 3.)

CHART VII.



All the cases here given not only recovered, but have been in perfect health since; and recovery was not followed by loss of hair. A number of cases of mild typhoid fever observed during the same years, with lower averages of temperature and of shorter duration, were accompanied by rose spots, ileo-caecal tenderness, characteristic diarrhoea, mostly with enlarged spleen, and followed by more or less complete loss of hair.

DISCUSSION.

DR. ATKINSON: Typhoid fever is the great, the almost universal, continued fever, and in our experience we find that most of the new continued fevers that from time to time have been written about are sooner or later relegated to the class of typhoid fever. Thus we find that typho-malarial fever has been definitely determined to be typhoid. When we go into countries where malarial fevers do not prevail we hear of mountain fevers, mucous fevers, gastric fevers, nervous fevers, etc., but sooner or later they have all become classed as typhoid fever. Dr. Baumgarten has referred to a paper which I read three or four years ago, and thinks that he recognizes in the cases which I reported cases that are of the same character as his own, and I feel, therefore, a little more confidence in believing that the cases he describes still belong to the class of typhoid fever and are varieties of typhoid fever. We should recognize the fact that typhoid is a most capricious disease, that it is atypical in very many cases. The typhoid fever of the class of people to whom he especially refers, of children, is especially atypical. It is a common thing for all the characteristic symptoms of typhoid, except fever, to be absent in children. If I recognize the class of cases which Dr. Baumgarten has described, I think I am constantly meeting them. They run the course which Dr. Baumgarten has described, and one can pretty confidently predict the course which such a fever will run. Dr. Baumgarten has referred to the fact that where the fever runs its course, and then develops the symptoms of typhoid, it is not fair that his position should be weakened by that fact. Suppose, on the other hand, that such a fever did not develop typhoid symptoms, then he claims it as one of his class. We are all familiar with cases running the course that Dr. Baumgarten has described, and then developing unmistakable symptoms of typhoid. We see cases of most undoubted typhoid fever without the development of high fever at all, and then again we see it running two or three weeks, and then lighting up, and having even hyperpyrexia. These cases, running such different courses, are due to the same origin. In one case, a young man having high fever, but an unclouded mind, and playful and cheerful, with a desire to be up, to eat, and having all the symptoms corresponding to those described in the paper, has, at a distance, a brother who had lived in the same house with him, and been exposed to the same influence, who has concurrently the typical symptoms of typhoid fever. It is true that these cases usually run a favorable course, but it is also true that occasionally we meet with cases in which the disease, after running this course for one to three weeks, will develop undoubted symptoms of typhoid. I think we need a good deal more evidence to make us accept the existence of another independent continued fever.

DR. BAUMGARTEN: Dr. Atkinson still insists on the classification of all cases, no matter how "abortive," under the name of typhoid. But let us look at analogies with other diseases. We have a bronchitis that is

tubercular, and much more bronchitis that is not tubercular; we have an angina that is diphtheritic, and anginas that are distinctly not diphtheritic; and as regards the argument of a case in the end proving to be typhoid after all, we have just such cases of supposed follicular angina which, after they have run a certain number of days, suddenly develop diphtheritic symptoms, and turn out to be diphtheria. I am very far from meaning to prove anything by this analogy, except that it is at least reasonable to suppose that there are continued fevers which are developed by the specific typhoid germ, and others, running perhaps a similar course as far as the fever is concerned, that are not so caused. Unless we look at the cases with the bias of "if they are not typhoid, what are they?" we have certainly no proof whatever that they are cases of typhoid fever. I think that, with very little chance of mistake, these cases can be recognized as distinct, clinically, from our usual cases of typhoid. Of course, I should not be at all surprised if further investigation, especially bacteriological investigation, should prove these cases to be identical, as to their origin, with typhoid fever; but if they are, I still think that the desire to separate them as a clinical form is not amiss, in view of the bearing upon treatment.

